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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KIA SILVERBROOK
SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN NSW, 2040
AUSTRALIA

EXAMINER
YE, LIN

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/112,786	Applicant(s) SILVERBROOK, KIA	
	Examiner Lin Ye	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION.

Specification

1. The substitute specification and new abstract filed on 4/17/03 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 filed on 4/17/03 have been considered but are moot in view of the new ground(s) of rejection.

Although a new ground of rejection has been used to address additional limitations that have been added to claims 1-20, a response is considered necessary for several of the applicant's arguments since the primary reference, Gove et al., will continue to be used to meet several of the claimed limitations.

Relative to claim 1, the Applicant argues that the phrase "hand-held" in preamble have weight in the claim 1, and examiner submits Gove discloses in Figure 49, does not contemplate such arrangement – a digital hand-held camera in the last examiner office action mailed on 12/17/02. The examiner agrees. However, the Gove reference discloses in Figures 46-48, the imaging personal computer (PC) can be constructed of three major elements, a camera (4600), an imaging processing device (4602) and a display device 4801 (See Col. 27, lines 11-16); the imaging PC can be built into **a small unit** (See Col. 28, lines 19-22). It is well known in the art at the time to see more advantages for integrating an imaging PC into a small unit such as a digital hand-held camera arrangement and the whole system is more

portable and compact. For this reason, it would have been obvious to see the imaging PC system is a digital hand-held camera system disclosed by Gove.

The Applicant argues that Gov's crossbar switch (20) can't be used to route data between processors. The examiner disagrees. The Gove reference clearly states that crossbar switch (20) is shown distributed, and in this form tends to mitigate communication bottlenecks so that communications can flow (route data) easily between the various parts of the system (See Col. 6, lines 47-52).

Relative to claims 2 and 6, the Applicant argues that Gove's Figure 29 is only for schematic of the master processor and not every Gove's processor includes an ALU. The Applicant should be noted that the Gove reference clearly states that a multiply and an ALU operation can also be performed by each processor (four processors 100-103) every cycle (See Col. 35, lines 40-45).

Relative to claims 3 and 4, the Applicant also argues that Gove's Figure 57 is only for transfer processor and not every Gove's processor including FIFO (first in and first out interface). The Examiner disagree, The Gove reference discloses the master processor, the parallel processors and the transfer processor as detailed in Figs 29-45 (See Col.34, lines 40-49). See Figure 29, the each processor has input (172) for loading instruction address and data into the processor and has output (171) for outputting the address and data. In order the each processor can complete to process the instruction, the each processor has FIFO interface inherently.

Relative to claim 5, the Applicant also argues that Gove reference discloses a series of processing elements that are selectively connectable to memory elements but not to each

other via a crossbar arrangement. The Examiner disagrees. The Gove reference clear states the crossbar switch is operative on a cycle-by-cycle basis to interconnect the various processors (See Col. 6, lines 15-17).

Relative to claim 7, the Applicant argues that not each of a plurality of processing elements includes the features defined in claim 7. The Applicant should be noted that the Gove reference discloses in Figures 29 and 32 for each parallel processor including the entire feather defined in claim 7.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gove et al. U.S. Patent 5,768,609.

Referring to claim 1, the Gove reference discloses in Figures 1, 29, 32 and 47-53, a digital camera system (image PC) has an image sensor (CCD 4906) for sensing an image as shown in Figure 49; modification (image processor 4900) means for modifying said sensed image in accordance with modification instructions input into said camera from an inbuilt input means; and an output means for printing out said modified image (see Col. 28, lines 40-

59); Wherein said modification (4900) includes a series of processing elements (a set of processors 100-103) arrange around a central crossbar switch (20) as shown in Figure 2 (See Col. 6, lines 10-24). In Figures 46-48, the imaging personal computer (PC) can be constructed of three major elements, a camera (4600), an imaging processing device (4602) and a display device 4801 (See Col. 27, lines 11-16); the imaging PC can be built into a small unit (See Col. 28, lines 19-22). It is well known in the art at the time to see more advantages for integrating an imaging PC into a small unit such as a digital hand-held camera arrangement and the whole system is more portable and compact. For this reason, it would have been obvious to see the imaging PC system is a digital hand-held camera system disclosed by Gove.

Referring to claims 2 and 6, the Gove reference discloses each of processor (100-103) includes Arithmetic Logic Unit (ALU) (2902) acting under the control of a microcode (instruction) store as shown in Figures 29 and 32 (See Col. 35, lines 40-45). ALU accepts a series of inputs interconnected and internal crossbar switch (20) to a series of core processing units (12) within ALU (See Col 34, lines 50-67).

Referring to claims 3 and 4, the Gove reference discloses transfer processor (11) includes an internal input and output FIFO (5701) for storing pixel data utilized by processing elements as shown in Figure 57. Processors are interconnected to read and write FIFO for reading and writing pixel data of images (See Col 58, lines 1-2). The Gove reference discloses the master processor, the parallel processors and the transfer processor as detailed in Figs 29-45 (See Col.34, lines 40-49). See Figure 29, the each processor has input (172) for loading instruction address and data into the processor and has output (171) for outputting

the address and data. In order the each processor can complete to process the instruction, the each processor has FIFO interface inherently.

Referring to claim 5, The Gove reference discloses all subject matter as discussed in respected claim 1, and he Gove reference clear states the crossbar switch is operative on a cycle-by-cycle basis to interconnect the various processors (See Col. 6, lines 15-17 and lines 32-35), except the reference does not explicitly show that the processing elements are interconnected to from a ring in which each element is also separately connected to its nearest neighbors in addition to the crossbar switch. Official Notice is taken that both the concept and the advantages of providing a ring arrangement for processing elements are well known and expected in the art. It would have been obvious to incorporate such a design – ring arrangement in Gove is known to provide the "cycle-by-cycle" operation more efficiency and can be built into small compact unit such as a digital hand-held camera arrangement.

Referring to claim 7, the Gove reference discloses each core-processing units (12) include at least one of a multiplier (2905) an adder and a barrel shifter (2910) as shown in Figure 29. It also discloses those features as shown in Figure 32 for each core-processing units.

Referring to claim 8, the Gove reference discloses each ALUs (3206 and 3226) connected number internal registers for the storage of temporary data as shown in Figure 32 (See Col. 35, lines 11-12).

Referring to claim 9, the Gove reference discloses processing elements (100-103) are further connected to a common data bus (40) for the transfer of pixel data as shown in Figure 2 (See Col. 6, lines 32-33).

Referring to claim 10, the Gove reference discloses the data bus (171) are interconnected to a data cache (13) which acts as an intermediate cache between processing elements (100-103) and a memory (10) store for storing images as shown in Figure 2 (See Col. 6, lines 30-32).

Referring to claim 11, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 1, and means includes a plurality of processing elements functionally interconnected to each other via a crossbar switch (See Col. 6, lines 32-34 and lines 15-18).

Referring to claim 12, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 2.

Referring to claim 13, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 3.

Referring to claim 14, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 4.

Referring to claim 15, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 5.

Referring to claim 16, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 6.

Referring to claim 17, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 7.

Referring to claim 18, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 8.

Referring to claim 19, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 9.

Referring to claim 20, the Gove reference discloses all subject matter as discussed with respected to same comment as with claim 10.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is **(703) 305-3250**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Lin Ye
September 5, 2003